

## Knowledge, attitude and practices of Saudi population in Arar regarding epilepsy and seizures

**To Cite:**

Abukanna AMA, Alenazi MSN, Alenazi NSN, Alenezi MMM, Alanazi IA. Knowledge, attitude and practices of Saudi population in Arar regarding epilepsy and seizures. Medical Science, 2021, 25(116), 2718-2727

**Author Affiliation:**

<sup>1</sup>Associate prof., Internal Medicine Department, faculty of medicine, NBU, Arar, KSA

<sup>2</sup>Undergraduate Medical student, NBU, Arar, KSA

**Peer-Review History**

Received: 24 September 2021

Reviewed & Revised: 26/September/2021 to 18/October/2021

Accepted: 19 October 2021

Published: October 2021

**Peer-review Method**

External peer-review was done through double-blind method.

**Abdelrahman Mohamed Ahmed Abukanna<sup>1</sup>, Manal Salamh N Alenazi<sup>2</sup>, Nuof Salamh N Alenazi<sup>2</sup>, Maryam Mohammed M Alenezi<sup>2</sup>, Ibtihal Aqeel Alanazi<sup>2</sup>**

**ABSTRACT**

**Background:** Persons with epilepsy remain to agonize from stigma expressed or professed based on myths, fallacies, and confusions that have persevered for countless years. **Objectives:** To study awareness and knowledge of the population about epilepsy and seizures and to study the attitude and practice of population towards treatment of epilepsy and seizures in KSA. **Methods:** A cross sectional Hospital based study design was adopted. The study was carried out in Arar, KSA, during the period from April 1<sup>st</sup> to July 31<sup>st</sup> 2021. **Results:** In our study, 47.1% of participants think temporary confusion is a symptom of epilepsy, 59.2% staring spell, 72.3% jerking and jerking movements, and 85.8% loss of consciousness. Regarding cause of epilepsy, only 68.1% of participants in our study think that genetics and family history have role in developing epilepsy, 75.3% head trauma, 76.9% brain diseases, 21.4% infectious diseases, 39.6% prenatal injuries, and 49% developmental disorders. In the current study, 8% believed there is treatment for epilepsy but only 33.6% knew there was a surgical treatment. In response to first aid measures for epileptic fits; 73.4% reported removing all objects that may be harmful from around the victim, and call 911. **Conclusion:** Epilepsy is still poorly understood in the Arar community. Knowledge and attitudes about epilepsy need to be changed. Misunderstandings must be corrected by physicians and health educators, and they must educate both patients and their families about the nature of the disease and how it should be treated.

**Keywords:** Epilepsy, Seizures, Knowledge, Attitude, Practices, Saudi Arabia, Arar

**1. INTRODUCTION**

Epilepsy is a frequent neurological disease characterized by recurrent seizures and is considered one of the stigmatizing disorders. A seizure usually results from the exaggerated electrical activity of the brain which is usually



uncontrolled and causing diminished level of alertness, memory, behavior, or feelings (Huff et al., 2014). As estimation, epilepsy affects about 6.54 out of 1000 individuals in Saudi Arabia (Benamer & Grosset, 2009). Most cases of epilepsy are idiopathic; however, some cases may be a result of brain injury, stroke, brain tumor, or drug/alcohol abuse. Besides, for some cases of epilepsy, certain genetic mutations have been identified as a cause. Generalized seizures are the result of wordy activation of the cerebral cortex at the beginning of an attack or generality of partial seizures (Stafstrom & Carmant, 2014). Most generalized seizures resolve in less than five minutes, but in the epileptic state, seizures last longer or occur serially without full awareness in between. The initial treatment for status epileptics is the same whether it is for provoked or unprovoked causes (Sathe et al., 2019).

All patients with seizures should be assessed for respiratory, pulmonary, and circulatory health with proper interventions and supportive care. Patients with prolonged or ongoing seizures may require other interventions, including medications and intensive care (Laccheo et al., 2019). As a result, it is difficult to live with someone with epilepsy. Social acceptance of patients with epilepsy is strongly dependent on the perception of epilepsy in society and is often a significant problem for cases and their household (Sirven, 2015). Several factors can affect the nature of life of people with epilepsy and their carers. These include unfavorable social conditions, family circumstances, frequency and severity of seizures, and the response rate (Karimi & Akbarian, 2016).

Some patients have found that social attitudes towards epilepsy are more harmful than the disorder itself. Adults with epilepsy usually have problems with social acceptance in terms of being admitted to a good institution and access to public housing. As a result of this disease, patients may lose their jobs and find it difficult to get married (Elliott & Shneker, 2016). Research has shown that people who are less knowledgeable and less knowledgeable about epilepsy tend to perceive diseases and misconceptions such as epilepsy as incurable, contagious, hereditary, a type of madness or mental problems (Karimi & Akbarian, 2016).

### **Study rationale**

The diminished information regarding epilepsy in the widespread population affects the lives of children and adults with epilepsy. Knowing about epilepsy is associated with lower perceptions of stigma and social isolation, and fewer depressive symptoms and delusions. Public awareness studies are important to successfully identify misunderstandings and misconceptions, which will help in designing targeted campaigns to improve the overall knowledge of the community.

### **Aim of the study**

To study awareness and knowledge of the population about epilepsy and seizures

To study the attitude and practice of population towards treatment of epilepsy and seizures in KSA

## **2. METHODOLOGY**

### **Study design**

A cross sectional Hospital based study design was adopted.

### **Study area and setting**

The study was carried out in Arar, KSA. Araris located in northern Saudi Arabia, near the Iraqi border.

### **Study period**

The study was conducted from April 1 to July 31, 2021.

### **Study population**

Randomly Selected (420) adult population in Arar city, throughout the period of the study was included in the study, provided they fulfill the inclusion criteria.

#### *Inclusion criteria*

- Age between 18 and 75 years
- Both genders
- All educational levels specially the illiterates.
- Exclusion criteria
- Older than 75 or younger than 18 years
- Non Saudi residents.

**Sample size**

The least sample magnitude for this study was determined as stated by Swinscoe as follows:

Where:

$$n = Z^2 \times P \times Q / D^2$$

Where:

n: Estimated sample size

Z: The z-value for the designated confidence level  $(1 - \alpha) = 1.96$ .

P: An estimated prevalence of having positive attitude towards epilepsy as 50% since there is no specific figure for that

Q:  $(1 - 0.50) = 50\%$ , i.e., 0.50

D: The extremetolerable error = 0.05.

So, the intendedlowest sample size was:

$$n = (1.96)^2 \times 0.50 \times 0.50 / (0.05)^2 = 384.$$

It was increased to 420 to compensate for nonresponses and incomplete forms.

**Data collection technique**

Systematic random sampling technique was followed. Data was collected from all adult male and female attendees (coming for any cause) of 5 randomly selected primary health care centers (PHC) in Arar city. After identifying the first participant randomly, every 4<sup>th</sup> attendant was interviewed to be included in the study till the required sample is covered. Collection of data was carried out through face-to-face meetings with the sample people and by completing the questionnaire that led us to the data required according to our objectives.

**Data collection tool**

The needed data was assembled by using a predesigned questionnaire the required data. It is composed of three main sections. Section 1 includes socio-demographic characteristics of the participants (age, gender, marital status, educational level and occupation). The second section was assessed public knowledge, awareness and perspective of epilepsy and the third section will ask about attitude and practices of population towards epilepsy and seizures and their treatment. The written consent form was included with the questionnaire. Permission to utilize both questionnaires was asked from the two main authors through email.

**Data management and analysis plan**

All data was entered and analyzed using SPSS 23 with the use of appropriate statistical methods for description and analysis. P-value less than 0.05 were considered for statistical significance.

**Ethical considerations**

The research proposal was approved by the Regional Research and Ethics committee in Northern Border University, Arar, with letter number (27/42/H). Data collectors briefly introduced the participants, explaining the objectives and benefits of the study. We obtained informed written consent from all participants. Data obscurity and discretion were upheld throughout the study.

**3. RESULTS**

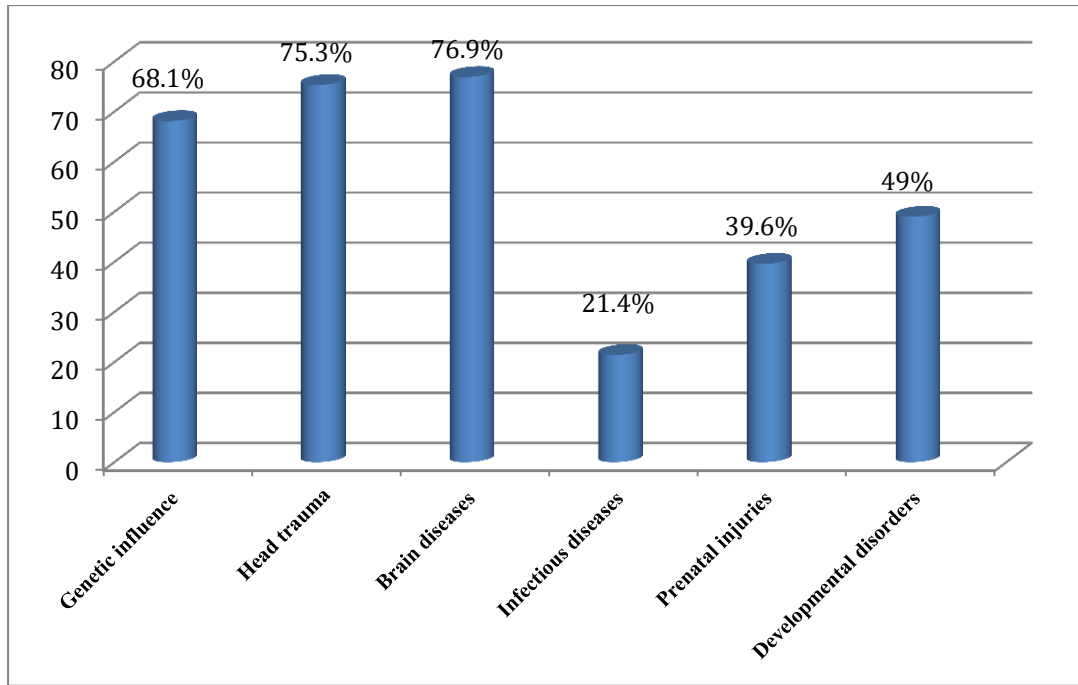
The study included 429 participants, 79.7% were females, the majority (41.3%) was 21-30 years old, 22.6% aged 41-50 and 19.6% aged 31-40. 72.5% have moderate social class, 76.0% have university or higher education. Source of information regarding epilepsy; 37.3% reported social media, 27.5% family and friends and only 11% awareness campaigns (Table 1). In our study, regarding cause of epilepsy, only 68.1% of participants in our study think that genetics and family history have role in developing epilepsy, 75.3% head trauma, 76.9% brain diseases, 21.4% infectious diseases, 39.6% prenatal injuries, and 49% developmental disorders (figure 1). Concerning the symptoms, 47.1% of participants think temporary confusion is a symptom of epilepsy, 59.2% staring spell, 72.3% jerking and jerking movements, and 85.8% loss of consciousness (figure 2). In the current study, 8% believed there is treatment for epilepsy but only 33.6% knew there was a surgical treatment (Table 2).

**Table 1** socio-demographic characteristics of the studied population and their sources of information about epilepsy (N=429)

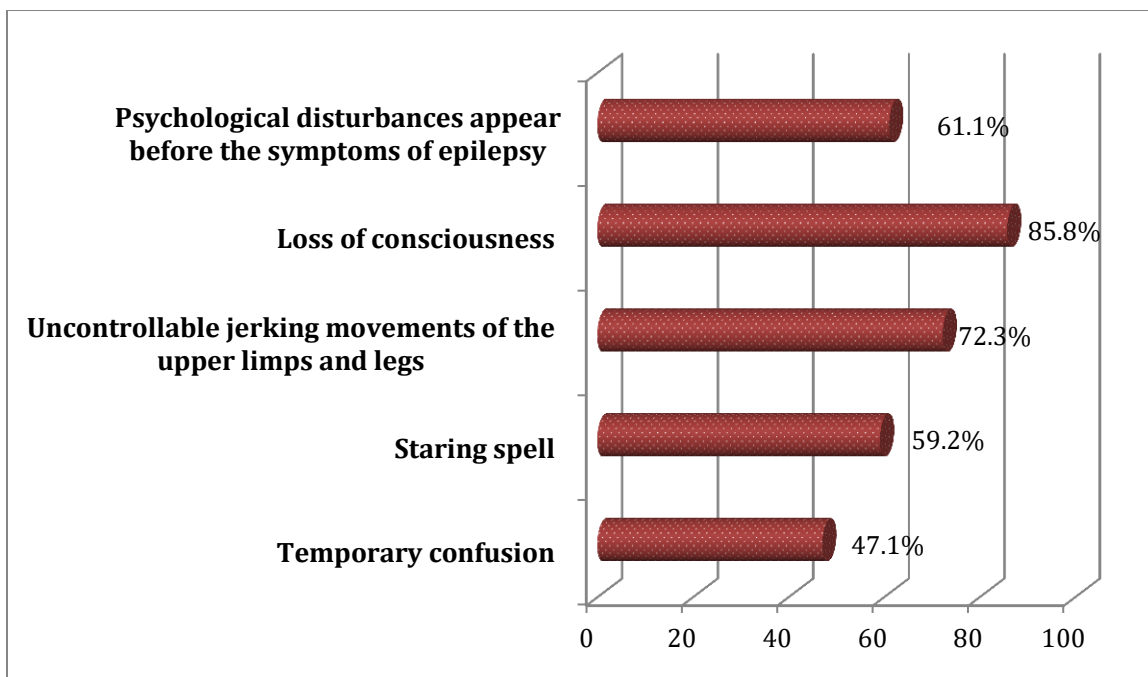
Parameters	Responses	Frequency (No.)	Percent (%)
Gender	Male	87	20.3
	Female	342	79.7
Age	20 or less	42	9.8
	21-30	177	41.3
	31-40	84	19.6
	41-50	97	22.6
	60-51	24	5.6
	60 or more	5	1.2
Social class	Low	34	6.8
	Moderate	311	72.5
	High	84	19.6
Social status	Singles	152	35.4
	Married	255	59.4
	Separated	13	3.0
	Widower	9	2.1
Educational level	Primary	4	.9
	Intermediate	15	3.5
	Secondary	84	19.6
	University or higher	326	76.0
Working status	Work	181	42.2
	No Work	248	57.8
Nationality	Saudi	417	97.2
	Non-Saudi	12	2.8
Source of information regarding epilepsy	Family and friends	118	27.5
	Medical and paramedical personnel	65	14.0
	Newspaper or TV news	39	9.1
	Awareness campaigns	47	11.0
	Social media	160	37.3
	Know someone who suffers from epilepsy	166	38.7

**Table 2** Knowledge of the studied population about causes, symptoms complications and triggers of epilepsy (N= 429)

Knowledge of Epilepsy	Yes	No	Relationship with Educational Level (P value)
Genetic influence of the causes of epilepsy	68.1%	31.9%	0.586
Head trauma is one of the causes of epilepsy	75.3%	24.7%	0.967
Brain diseases cause epilepsy	76.9%	23.1%	0.271
Infectious diseases are one of the causes of epilepsy	21.4%	78.6%	0.123
Prenatal injuries causes of epilepsy	39.6%	60.4%	0.021
Developmental disorders causes of epilepsy	49.0%	51.0%	0.093
Temporary confusion is a symptom of epilepsy	47.1%	52.9%	0.308
Staring spell is a symptom of epilepsy	59.2%	40.8%	0.001
Uncontrollable jerking and jolting movements of the upper limbs and legs is a symptom of epilepsy	72.3%	27.7%	0.161
Loss of consciousness or awareness of the symptoms of epilepsy	85.8%	14.2%	0.002
Psychological troubles (Such as fear, anxiety, or an illusion) appear before the symptoms of epilepsy	61.1%	38.9%	0.329
Falling is a complication of epilepsy	74.1%	25.9%	0.129
Sudden unexpected death is a complication of epilepsy	46.2%	53.8%	0.483
Stroke or other vascular disease is a complication of epilepsy	50.6%	49.4%	0.072
Not getting enough sleep is a trigger for epileptic seizures	61.8%	38.2%	0.334
Exposure to fever or illness is one of the triggers for epileptic seizures	62.7%	37.3%	0.773
Stress is an elicitor for epileptic convulsions	68.1%	31.9%	0.906
Alcohol and some types of medications are triggers for epileptic seizures	66.0%	34.0%	0.009
Skipping certain meals, overeating, or eating certain types of foods are among the triggers for epileptic seizures	36.4%	63.6%	0.056
There is a drug treatment for epilepsy	83.0%	17.0%	0.152
There is a surgery for treatment of epilepsy	33.6%	66.4%	0.028



**Figure 1** Knowledge of the studied population about causes of epilepsy

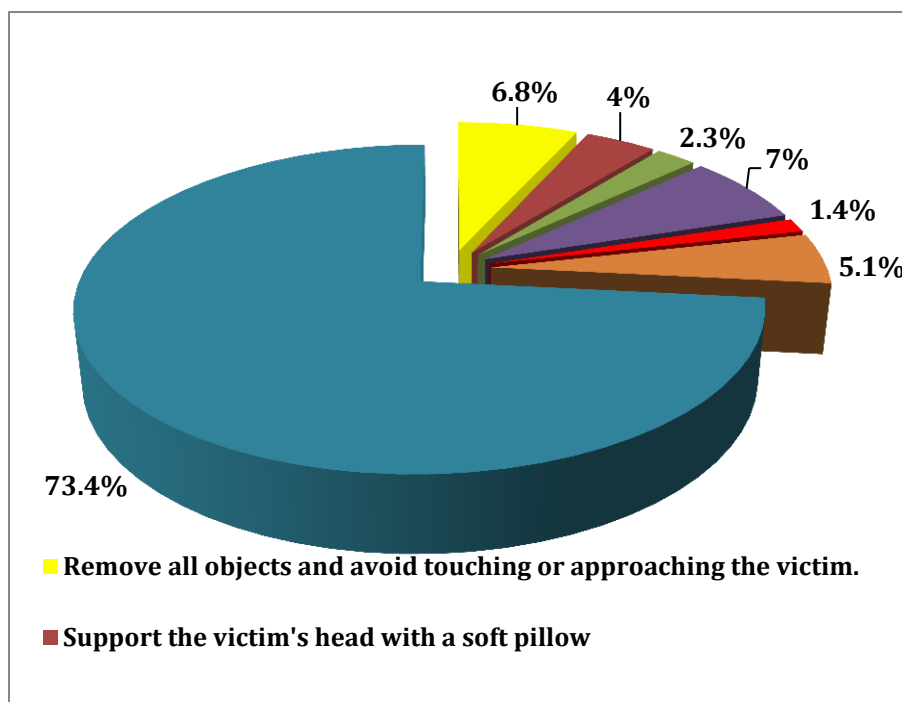


**Figure 2** Knowledge of the studied population about the symptoms of epilepsy

In the first aid management of epileptic fits (figure 3); 73.4% reported removing all objects or things that may be harmful from around the victim, avoid touching or approaching the victim, supporting the victim's head with a soft pillow if he falls to the ground, talking to the patient calmly and thoughtfully to keep him away from any danger surrounding him, control the nerves and try to calm down, do not put anything in the victim's mouth and to watch the time, and if the seizure does not end within five minutes, call 911 and seek medical help. 7.0% reported controlling the nerves and try to calm down only. 6.8% reported removing all objects or things that may be harmful from around the victim, and avoid touching or approaching the victim only (Table 3).

**Table 3** knowledge about age of manifestation of epilepsy and First aid measures for a patient with epileptic fit among the studied population (N= 429)

Parameter	Responses	Frequency (No.)	Percent (%)
Age of manifestation of epilepsy	Childhood	126	29.4
	Adulthood	43	10.0
	At any age	113	26.3
	Do not know	147	34.3
First aid measures for a patient with epileptic fit	Remove all objects that may be harmful and avoid touching or approaching the victim.	29	6.8
	Support the victim's head with a soft pillow if he falls to the ground.	17	4.0
	Talk to the patient calmly and kindly	10	2.3
	Try to calm down the patient	30	7.0
	Do not put anything in the victim's mouth.	6	1.4
	Watch the time, and if the seizure does not end within five minutes, call 911 and seek medical help.	22	5.1
	All of the above measures	315	73.4



**Figure 3** knowledge about first aid measures for a patient with epileptic fit among the studied population

#### 4. DISCUSSION

Persons with epilepsy remain to agonize from stigma expressed or professed based on myths, fallacies, and confusions that have persevered for countless years (Krishnaiah et al., 2016). Several studies conducted to conclude knowledge about epilepsy revealed that publics alive in dissimilar nations of the world, and uneven these patients, have little information of the reason, type, and management of epilepsy (Krishnaiah et al., 2016). In our study, 47.1% of participants think temporary confusion is a symptom of epilepsy, 59.2% staring spell, 72.3% jerking and jerking movements, and 85.8% loss of consciousness. Another study reported



Jerking (50.6%) and loss of consciousness (47.4%) were recognized as the shared indices of epilepsy (Ezeala-Adikaibe et al., 2016). Shaking (77.3%) and unconsciousness (82.4%) were identified as the most common manifestations of epilepsy in another study (Anene-Okeke et al., 2020).

Regarding cause of epilepsy, only 68.1% of participants in our study think that genetics and family history have role in developing epilepsy, 75.3% head trauma, 76.9% brain diseases, 21.4% infectious diseases, 39.6% prenatal injuries, and 49% developmental disorders. Another study reported that about 68% of respondents believed correctly that epilepsy occurred due to a brain illness, 22.6% and 23.1% of the respondents assumed epilepsy was a type of craziness besides a hereditary disease, respectively; widespread misunderstandings were that epilepsy is genetic 31%, is infectious 12%, and is due to antecedent iniquity 21.6% (Krishnaiah et al., 2016). In Saudi Arabia, a study reported that (1.3%) of the sampled families believed that epilepsy is transmissible, (57.3%) thought it is a heritable disease, (43.3%) thought it is a mental illness and (44.7%) thought it is related to Jinn (Neyaz et al., 2016). Similar results have been reported in studies conducted in different regions of KSA. In Jeddah, for instance, Obeid and his colleagues (2012) reported that 40.3% of school teachers and 50.4% of students in their sample believed that epilepsy may be caused by Jinn. Furthermore, in a study conducted at the Pediatric Neurology Outpatient Department at King Abdul Aziz University Hospital in Jeddah, Zaini and his colleagues reported that 44% of parents of epileptic children supposed that epilepsy was related to evil (Neyaz et al., 2016). Kassie et al., (2014) conveyed that (25.5%) defendants appropriately thought that epilepsy is produced by brain damage or disease. Besides, 12 (6.6%) considered epilepsy is triggered by evil spirits. In addition, 44 (24.4%) defendants attributed the reason of epilepsy to another cause as from God, 8 (4.4%) defendants attributed it to genetics, 4 (2.2%) of them believe it is a penalty for depravity, and 4 (2.2%) stated that epilepsy is infectious and spread by communication with epilepsy cases.

Regarding source of information about epilepsy; 37.3% reported social media, 27.5% family and friends and only 11% awareness campaigns. Ezeala-Adikaibe et al., (2013) in Nigeria and reported the commonest sources of information were the electronic media (36.4%) and family members (25.6%). Another study stated the commonest source of info was the social broadcasting (21.5%) (Anene-Okeke et al., 2020) which agreed with a study reported 63.4% of the respondents got the information from mass media, while 22.1%, 12.6%, and 1.9% of the respondents got the knowledge from health care providers, healthcare workers, and their studying curriculums (Teferi & Shewangizaw, 2015).

In response to first aid measures for epileptic fits; 73.4% reported removing all objects or things that may be harmful from around the victim, avoid touching or approaching the victim, supporting the victim's head with a soft pillow if he falls to the ground, talking to the patient calmly and thoughtfully to keep him away from any danger surrounding him, control the nerves and try to calm down, do not put anything in the victim's mouth and to watch the time, and if the seizure does not end within five minutes, call 911 and seek medical help. 7.0% reported controlling the nerves and try to calm down only. 6.8% reported removing all objects or things that may be harmful from around the victim, and avoid touching or approaching the victim only. Another study reported that 25.8% of respondents preferred that person should be taken to a doctor, 69.9% respondents would make the person hold a bunch of keys to terminate the epileptic attack, and 5.3% suggested water to be given (Krishnaiah et al., 2016). This was comparable to a study reported 50.6% agreed that an object should be inserted into the mouth, while 49.5% would call for medical help and 28.8% would remove the person from harm (Ezeala-Adikaibe et al., 2016). In a Saudi study; less than half respondents (46.7%) identified in what way to achieve first aid for a convulsing patient; these included (62.5%) of epileptic children and (34.9%) of normal children, a statistically significant difference between the two groups ( $p = 0.001$ ) (Neyaz et al., 2016).

Persons suffering from epilepsy and their closed relatives face socio-cultural barriers in the form of negative attitudes and discrimination due to causation beliefs. Several studies revealed that social and demographic factors influence treatment choices. These factors include income level, education level, age, gender, social network, and the distance an individual travels to reach the treatment location (Ekeh & Ekrikpo, 2015). In the current study, 8% believed there is treatment for epilepsy but only 33.6% knew there was a surgical treatment. In another Saudi study; a great percentage of defendants (86.7%) believed that epilepsy should be treated medically and (86%) stated that it is curable. However, 15.3% still believed in the value of traditional medicine in treating epilepsy (Neyaz et al., 2016). Reports from previous studies examining people's beliefs about using traditional medicines, such as herbal therapy and cautery, to manage epilepsy have been inconsistent. In Riyadh study, 14.6% of the participants deliberated herbal cure as part of their epilepsy management (Alaqeel & Sabbagh, 2013). In Jeddah, it was stated that 24% of teachers in the studied schools and 27.9% of undergraduate students of university saw herbs as a type of the management of epilepsy (Obeid et al., 2012).



## 5. CONCLUSION

Epilepsy is still misunderstood in some parts of our community. Epilepsy knowledge and attitudes need to be changed, according to the authors. For mass society education, it is necessary to develop and implement programs and campaigns. These misunderstandings must be corrected by doctors and health educators, as well as by educating both the patients and their families about the condition and how it should be managed.

### Acknowledgements

The authors would like to acknowledge the Deanship of Scientific Research and the Deanship of Community Services of Northern Border University, Kingdom of Saudi Arabia for supporting this work. Our appreciation and thanks to the people who helped us in our study and participated with the data collection, our doctors who guide us throw this research and Northern Border University for giving us this opportunity to learn.

### Informed consent

Informed consent was obtained from all participants included in the study.

### Ethical considerations

Prior to the start of the study, the research proposal was approved by the Regional Research and Ethics committee in Northern Border University, Arar, with letter number (27/42/H).

### Author Contributions

All the authors contributed evenly with regards to data collecting, analysis, drafting and proofreading the final draft.

### Conflicts of interest

The authors declare that they have no conflict of interest.

### Funding

This study has not received any external funding.

### Data and materials availability

All data associated with this study are present in the paper.

## REFERENCES AND NOTES

- Alaqeel A, Sabbagh A. Epilepsy: what do Saudi's living in Riyadh know? *Seizure* 2013; 22:205–209.
- Anene-Okeke CG, Anosike C, Aluh DO, Odo LE. Secondary school students' knowledge, attitude, and practices towards epilepsy in Nsukka City, Enugu State. *Epilepsy Behav* 2020; 112:107441.
- Benamer HT, Grosset DG. A systematic review of the epidemiology of epilepsy in Arab countries. *Epilepsia* 2009; 50:2301–4.
- Ekeh BC, Ekrikpo UE. The knowledge, attitude, and perception towards epilepsy amongst medical students in Uyo, Southern Nigeria. *Adv Med* 2015; 2015 876135.
- Elliott JO, Shneker BF. Patient, caregiver, and health care practitioner knowledge of, beliefs about, and attitudes toward epilepsy. *Epilepsy Behav* 2008; 12(4):547–556.
- Ezeala-Adikaibe BA, Achor JU, Onwukwe J, Ekenze OS, Onwuekwe IO, Chukwu O, Onyia H, Ihekwa M, Obu C. Knowledge, attitude and practice towards epilepsy among secondary school students in Enugu, southeast Nigeria. *Seizure* 2013; 22(4):299-302.
- Huff JS, Melnick ER, Tomaszewski CA, Thiessen ME, Jagoda AS, Fesmire FM., American College of Emergency Physicians. Clinical policy: critical issues in the evaluation and management of adult patients presenting to the emergency department with seizures. *Ann Emerg Med* 2014; 63(4):437-47.e15.
- Karimi N, Akbarian SA. Knowledge and Attitude toward Epilepsy of Close Family Members of People with Epilepsy in North of Iran. *Adv Med* 2016; 2016:8672853.
- Kassie GM, Kebede TM, Duguma BK. Knowledge, attitude, and practice of epileptic patients towards their illness and treatment in Jimma University specialized hospital, southwest Ethiopia. *N Am J Med Sci* 2014; 6(8):383-90.
- Krishnaiah B, Alwar SP, Ranganathan LN. Knowledge, attitude, and practice of people toward epilepsy in a South Indian village. *J Neurosci Rural Pract* 2016; 7(3):374-380.

11. Laccheo I, Sonmezturk H, Bhatt AB, Tomycz L, Shi Y, Ringel M, DiCarlo G, Harris D, Barwise J, Abou-Khalil B, Haas KF. Non-convulsive status epilepticus and non-convulsive seizures in neurological ICU patients. *Neurocrit Care* 2015; 22(2):202-11
12. Neyaz HA, Aboauf HA, Alhejaili ME, Alrehaili MN. Knowledge and attitudes towards epilepsy in Saudi families. *J Taibah Univ Med Sci* 2016; 12(1):89-95.
13. Obeid T, Abulaban A, Al-Ghatani F, Al-MalkiAR, Al-Ghamdi A. Possession by 'Jinn' as a cause of epilepsy (Saraa): a study from Saudi Arabia. *Seizure* 2012; 21(4):245-9.
14. Sathe AG, Tillman H, Coles LD, Elm JJ, Silbergleit R, Chamberlain J, Kapur J, Cock HR, Fountain NB, Shinnar S, Lowenstein DH, Conwit RA, Bleck TP, Cloyd JC. Underdosing of Benzodiazepines in Patients With Status Epilepticus Enrolled in Established Status Epilepticus Treatment Trial. *Acad Emerg Med* 2019; 26(8):940-943.
15. Sirven JI. Epilepsy: A Spectrum Disorder. *Cold Spring Harb Perspect Med* 2015; 5(9):a022848.
16. Stafstrom CE, Carmant L. Seizures and epilepsy: an overview for neuroscientists. *Cold Spring Harb Perspect Med* 2015; 5(6):a022426.
17. Teferi J, Shewangizaw Z. Assessment of knowledge, attitude, and practice related to epilepsy: a community-based study. *Neuropsychiatr Dis Treat* 2015; 11:1239-1246.